Appendix H

United States Environmental Protection Agency

National Ambient Air Monitoring Technical System Audit Form

Table of Contents

1) General / Quality Management

State/ Local / Tribal Agency Audited: Arkansas Department of Environmental Quality

Address: 5301 Northshore Dr,

City, State, and Zip Code: NLR, AR 72118

Date of Technical System Audit: 11/26/12

Auditor / Agency: EPA

a) Program Organization

1) Key Individuals: Dick Cassat, Miriam Talbert, Lisa Gulledge, Shaun Kitchen, Benjamin Gilbert

1.1) Agency Director: Teresa Marks

1.2) Ambient Air Monitoring (AAM) Network Manager: Miriam Talbert/ Shaun Kitchens

1.3) Quality Assurance Manager: Miriam Talbert

1.4) QA Auditors: Lab Personnel

1.5) Field Operations Supervisor / Lead: Miriam Talbert/ Lisa Gulledge

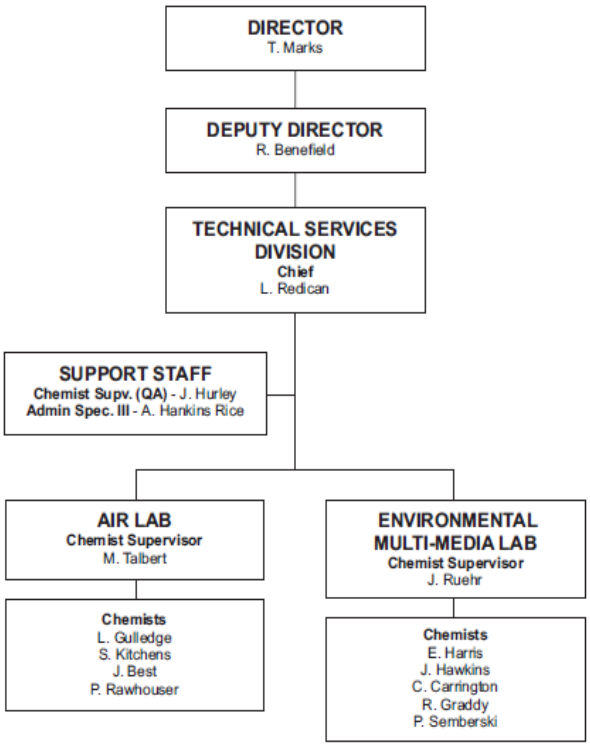
1.6) Laboratory Supervisor: Miriam Talbert

1.7) QA Laboratory Manager: Miriam Talbert

1.8) Data Management Supervisor / Lead: Miriam Talbert/ Lisa Gulledge

ARKANSAS DEPARTMENT OF ENVIRONMENTAL QUALITY

Technical Services Division Personnel Chart



THIS PAGE LAST UPDATED: 04/29/13

Flow Chart:

Key position staffing. Number of personnel available to each of the following program areas:

Program Area	Number of People Primary	Number of People Backup	Vacancies	Program Area	Number of People Primary	Number of People Backup	Vacancies
Network Design and Siting	4	0	1	Data and Data Management	1	1	0
QC activities	3	0	1	Equipment repair and maintenance	4	0	1
QA activities	1	1	1	Financial Management	2	0	0

List available personnel by name and percentage of time spent on each task category

Name	Network Design and siting	QC activities	QA activities	Equipment repair and maintenance	Data and Data Management	Financial Management
Miriam Talbert	15	20	10	25	25	5
Lisa Gulledge	5	25	25	25	20	
Shaun Kitchens	20	20	20	25	15	
Vacant	5	20	20	55		
Angela Hankins	5	15		20		
Dick Cassat						15
Vacant	5	20	20	50		

Additional Personnel have been hired as of 4/13
Lessie Redican has replaced Dick Cassat as of 4/13.

List personnel who have authority or are responsible for:

Activity	**Name**	**Title**
QA Training Field/Lab	Miriam, Lisa, Shaun	Supervisor, Chemist
Grant Management	Dick, Miriam, Brenda Hughes	Chief, Supervisor, AA
Purchases greater than $500	All	
Equipment and Service Contract Management	All	
Staff appointment	Miriam	Supervisor

b) Facilities

Identify the principal facilities where the agency conducts work that is related to air monitoring. Do not include monitoring stations but do include facilities where work is performed by contractors or other organizations.

Facility AAM Function	Offices responsible for ensuring adequacy	Location	Adequate Y/N To be completed by auditor
Instrument repair	Air Lab/ADEQ	5301 Northshore Dr NLR, AR 72118	
Certification of Standards e.g. gases, flow transfers, MFC	Air Lab/ADEQ	5301 Northshore Dr NLR, AR 72118	
PM filter weighing	Air Lab/ADEQ	5301 Northshore Dr NLR, AR 72118	
Data verification and processing	Air Lab/ADEQ	5301 Northshore Dr NLR, AR 72118	
General office space	Air Lab/ADEQ	5301 Northshore Dr NLR, AR 72118	
Storage space, short and long term	Air Lab/ADEQ	5301 Northshore Dr NLR, AR 72118	
Air Toxics (Carbonyls, VOC s, Metals):	NA		

Indicate any facilities that should be upgraded. Identify by function and any suggested improvements or recommendations.
None of the above at the present.

Are facilities adequate concerning safety? Yes Please explain if answer is no any suggested improvements or recommendations

Are there any significant changes which are likely to be implemented to agency facilities within the next one to two years? Comment on agency's needs for additional physical space (laboratory, office, storage, etc.).

Facility	Function	Proposed Change - Date
None		

c) Independent Quality Assurance and Quality Control

1. Status of Quality Assurance Program

Question	Yes	No	Comment
Does the agency perform QA activities with internal personnel? If no go to Section d.	**X**		
Does the agency maintain a separate laboratory to support quality assurance activities?		**X**	
Has the agency documented and implemented specific audit procedures separate from monitoring procedures?	**X**		
Are there two levels of management separation between QA and QC operations? Please explain:		**X**	
See attached organizational chart. QA/QC are performed by different personnel with independent sets of equipment.			
Does the agency have identifiable auditing equipment and standards (specifically intended for sole use) for audits?	**X**		

2. Internal Performance Audits

Question	Yes	No	Comment
Does the agency have separate facilities to support audits and calibrations?		**X**	
If the agency has in place contracts or similar agreements either with another agency or contractor to perform audits or calibrations, please name the organization and briefly describe the type of agreement. **Calibration of Balances by Aldinger Corp.**			
If the agency does not have a performance audit SOP (included as an attachment), please describpe performance audit procedure for each type of pollutant. SOPs provided at TSA			
Does the agency maintain independence of audit standards and personnel?		**X**	
Please provide information on certification of audit standards currently being used. Include information on vendor and internal or external certification of standards. We currently are under contract with Airgas for all of our gas audit standards. They certified externally at different Airgas labs.			
Does the agency have a certified source of zero air for performance audits?		**X**	We currently use zero air generators from Thermo Environmental and ESC. We use different zero air generator for performance audits than we do with precision and calibrations.
Does the agency have procedures for auditing and/or validating performance of Meteorological monitoring?	**X**		
Please provide a list of the agency's audit equipment and age of audit equipment.			

Thermometers:5-10years, Chinook & manometers:1-8 years, Barometers:2-8years,Met Equipment 2 years			
Is audit equipment ever used to support routine calibration and QC checks required for monitoring network operations?		**X**	
If yes, please describe.			
Are standard operating procedures (SOPs) for air monitoring available to all field personnel?	**X**		
Has the agency established and has it documented criteria to define agency-acceptable audit results?	**X**		

Please complete the table below with the pollutant, monitor and acceptance criteria.

Pollutant	**How is performance tracked (e.g., control charts)**	**Audit Result Acceptance Criteria**
CO	Bi-weekly Precision Checks	Within 10%
O_3	Bi-weekly Precision Checks	Within 7%
NO_2	Bi-weekly Precision Checks	Within 10%
SO_2	Bi-weekly Precision Checks	Within 10%
PM_{10}	Monthly Flow, Temperature, Pressure, and Leak Checks	Within 4% for Flow, 4 deg C for Temp, and 10 mm for Press
$PM_{2.5}$	Monthly Flow, Temperature, Pressure, and Leak Checks	Within 4% for Flow, 4 deg C for Temp, and 10 mm for Press
Pb	Monthly Flow, Temperature, Pressure, and Leak Checks	Within 4% for Flow, 4 deg C for Temp, and 10 mm for Press
VOCs	NA	NA
Carbonlys	NA	NA
$PM_{2.5}$ speciation	Monthly Flow, Temperature, Pressure, and Leak Checks	Within 4% for Flow, 4 deg C for Temp, and 10 mm for Press
$PM_{10\text{-}2.5}$ speciation	NA	NA
$PM_{10\text{-}2.5}$ FRM Mass	Monthly Flow, Temperature, Pressure, and Leak Checks	Within 4% for Flow, 4 deg C for Temp, and 10 mm for Press
Continuous PM_{25}	Quarterly Flow, Temperature, Pressure, and Leak Checks	Within 4% for Flow, 4 deg C for Temp, and 10 mm for Press
Trace Levels (CO)	Bi-weekly Precision Checks	Within 10%
Trace Levels (SO_2)	Bi-weekly Precision Checks	Within 10%
Trace Levels (NO)	Bi-weekly Precision Checks	Within 10%
Trace Levels (NOy)	Bi-weekly Precision Checks	Within 10%
Surface Meteorology	Annual Checks	
Others		

Question	Yes	No	Comment
Were these audit criteria based on, or derived from, the guidance found in Volume II of the QA Handbook for Air Pollution Measurement System, Section 2.0.12?	X		If no, please explain. If yes, please explain any changes or assumptions made in the derivation. No changes or assumptions made

What corrective action may be taken if criteria are exceeded? If possible, indicate two examples of corrective actions, taken within the period since the previous systems audit which are based directly on the criteria discussed above.

Corrective Action # 1 No examples within the time period.

Corrective Action #2 See table in the ADEQ QAPP, Section 11.1.3

d) Planning Documents including QMP, QAPP, &SOP

QMP questions	**Yes**	**No**	
Does the agency have an EPA-approved quality management plan?	X		
If yes, have changes to the plan been approved by the EPA?	X		
Has the QMP been approved by EPA within the last five years?	X		
Please provide: Date of Original Approval: Unknown Date of Latest Approval:3/2/2012 for TSA Current: 3/12/2013			
QAPP questions	**Yes**	**No**	**Comment**
Does the agency have an EPA-approved quality assurance project plan?	**X**		
If yes, have changes to the plan been approved by the EPA?	**X**		
Has the QAPP been reviewed by EPA annually?	**X**		
Please provide: Date of Original Approval Unknown Date of Last Revision 11/30/12 Date of Latest Approval: 11/30/12			
Does the agency have any revisions to your QA project plan still pending?		**X**	
How does the agency verify the QA project plan is fully implemented?	Validation of data		
How are the updates distributed?	Electronically		
What personnel regularly receive updates?	Requested		
SOP questions			
Has the agency prepared and implemented standard operating procedures (SOPs) for all facets of agency operation?	X		We are just responsible for the lab…not the agency
Do the SOPs adequately address ANSI/ASQC E-4 quality system required by 40 CFR 58, Appendix A?	X		
Are copies of the SOP or pertinent sections available to agency personnel?	X		
How does the agency verify that the SOPs are implemented as provided?	Through documentation		
How are the updates distributed?	Electronically		

e) General Documentation Policies

Question	Yes	No	Comment
Does the agency have a documented records management plan?	X		
Does the agency have a list of files considered official records and their media type I.E. paper, electronic?	X		electronic
Does the agency have a schedule for retention and disposition of records?	X		
Are records for at least three years?	X		
Who is responsible for the storage and retrieval of records?	Miriam Talbert, Lisa Gulledge, Computer Section		
What security measures are utilized to protect records?	Computer Section Question		
Where/when does the agency rely on electronic files as primary records?	All Continuous Monitoring Data		
What is the system for the storage, retrieval and backup of these files?	Backed up Nightly		

f) Training

Question	Yes	No	Comment
Does the agency have a training program and training plan?		X	
Where is it documented?			
Does it make use of seminars, courses, EPA sponsored college level courses?		X	
Are personnel cross-trained for other ambient air monitoring duties?	X		
Are training funds specifically designated in the annual budget?		X	
Does the training plan include:	**Yes**	**No**	**Comment**
Training requirements by position		X	On the Job Training
Frequency of training		X	As needed
Training for contract personnel	X		Air Lab – PM samplers only
A list of core QA related courses		X	

Indicate below the three most recent training events and identify the personnel participating in them.		
Event	**Dates**	**Participant(s)**
AQS annual conference	8/20/12 thru 8/25/12	Lisa Gulledge
AQS Webinar	4/12	Lisa Gulledge
AQS Submittal Automation Tutorial	5/12	Lisa Gulledge

Oversight of Contractors and Suppliers

Question Contractors	Yes	No	Comment
Who is responsible for oversight of contract personnel?	Lisa Gulledge, Shaun Kitchens, Ben Gilbert		
What steps are taken to ensure contract personnel meet training and experience criteria?	On the job training		
How often are contracts reviewed and /or renewed?	Gas contracts are awarded on a yearly basis by bids.		
Question Suppliers			
Have criteria and specification been established for consumable supplies and for equipment?	X		
What supplies and equipment have established specifications?	PM filter media, audit and calibration gasses, All Monitors		
Is equipment from suppliers open for bid?		X	Sole source designation

g) Corrective Action

Question	Yes	No	Comment
Does the agency have a comprehensive corrective action program in place and operational?	X		
Have the procedures been documented?	X		
As a part of the QA project plan?	X		
As a separate standard operating procedure?		X	
Does the agency have established and documented corrective limits for QA and QC activities?	X		
Are procedures implemented for corrective actions based on results of the following which fall outside the established limits:	X		
Performance evaluations	X		
Precision goals	X		
Bias goals		X	
NPAP audits	X		
PEP audits	X		

Question	Yes	No	Comment
Validation of one point QC check goals	X		
Completeness goals	X		
Data audits	X		
Calibrations and zero span checks	X		
Technical Systems Audit	X		
Have the procedures been documented?	X		In SOPs
How is responsibility for implementing corrective actions assigned? Briefly discuss: The issue is brought to the attention of the Program Manager. Issues are discussed and decisions made – all dependent on the issue. It is corrected, data corrected, deleted or flagged. Noted in log book			
How does the agency follow up on implemented corrective actions? Dependent on the issue and occurrences. Action may be taken up with the vendor, if major equipment/software problem.			
Briefly describe recent examples of the ways in which the above corrective action system was employed to remove problems. Problem with a sampler operator not performing the required number of verifications. Slack was taken up by ADEQ employees. Retraining of operator and constant reminders being sent by email. Resulted in more timely verifications being performed.			

h) Quality Improvement

Question	Yes	No	Comment
What actions were taken to improve the quality system since the last TSA?	Better record keeping		
Since the last TSA do your control charts indicate that the overall data quality for each pollutant steady or improving?	X		
For areas where data quality appears to be declining has a cause been determined?		X	No date quality declining
Have all deficiencies indicted on the previous TSA been corrected?	X		
If not explain.			
Are there pending plans for quality improvement such as purchase of new or improved equipment, standards, or instruments?	YES		We are planning to purchase more iSeries gas and particulate samplers which are not only a newer technology but will communicate with our wireless modem network.

i) External Performance Audits

Question	Yes	No	Comment
Does your agency participate in NPAP, PM2.5 PEP, and Other performance audits performed by an external party and/or using external standards.	**X**		
If the agency does not participate, please explain why not:			
Are NPAP audits performed by QA staff, site operators, calibration staff, and/or another group?	**X**		Another group. They are currently performed by EPA contractor Alion Science and Technology

National Performance Audit Program (NPAP) and Additional Audits

Does the agency participate in the National Performance Audit Program (NPAP) as required under 40 CFR 58, Appendix A? If so, identify the individual with primary responsibility for the required participation in the National Performance Audit Program.

Name: Shaun Kitchens Program function: Coordinating with NPAP representative for site visits

Please complete the table below:

Parameter Audited	Date of Last NPAP Audit
CO	7/20/2011
O_3	7/20/2011
SO_2	7/20/2011
NO_2	7/20/2011
PM_{10}	NA
$PM_{2.5}$	12-11-12
Pb	NA
VOCs	NA
Carbonlys	NA

a) Network Design

2) Network Management/Field Operations

State/ Local / Tribal Agency Audited: Arkansas Department of Environmental Quality

Address: 5301 Northshore Dr,

City, State, and Zip Code: NLR, AR 72118

Date of Technical System Audit: 11/26/12

Auditor / Agency: EPA

Key Individuals

Ambient Air Monitoring Network Manager: Miriam Talbert

Quality Assurance Manager: Miriam Talbert

Field Operations Supervisor/Lead: Shaun Kitchens

Field Operations Staff involved in the TSA: Shaun Kitchens, Miriam Talbert

Complete the table below for each of the pollutants monitored as part of your air monitoring network. (Record applicable count by category.) Also indicate seasonal monitoring with an S for a Parameter/Category as appropriate. Provide the most recent annual monitoring network plan, including date of approval and AQS quicklook or if not available, network description and other similar summary of site data, including SLAMS, Other and Toxics

Category*	SO_2	NO_2	CO	O_3	PM_{10}	$PM_{2.5}$	Pb	Other (type)	Other (type)
NCore	1	1	1	1	1	1	1	Speciation	Carbon Speciation
SLAMS	1	1		7	1	11			
SPM									
PAMS									
Total									

*NCore - National Core monitoring stations; SLAMS - state and local air monitoring stations; SPM - special purpose monitors; PAMS - photochemical assessment monitoring stations

Question	**Yes**	**No**	**Comment**
What is the date of the most current Monitoring Network Plan?	June 2012		
I. Is it available for public inspection	X		
II. Does it include the information required for each site?			
AQS Site ID #	X		
Street address and geographic coordinates	X		
Sampling and Analysis Method(s)	X		
Operating Schedule	X		
Monitoring Objective and Scale of Representativeness	X		
Site suitable/not suitable for comparison to annual PM2.5 NAAQS?	X		
MSA, CBSA or CSA indicated as required?	X		

Indicate by Site ID # any non-conformance with the requirements of 40 CFR 58, Appendices D and E, along with any waivers granted by the Regional Office (provide waiver documentation)

Monitor	**Site ID**	**Reason for Non-Conformance**
SO_2	None	
O_3	None	
CO	None	
NO_2	None	
PM_{10}	None	
$PM_{2.5}$	None	
Pb	None	See 2012 ANR for waivers (Attached at the end of this document, Page 61)

Question	Yes	No	Comment
Are hard copy site information files retained by the agency for all air monitoring stations within the network?	X		
Does each station have the required information including:			
AQS Site ID Number?	X		
Photographs/slides to the four cardinal compass points?	X		
Startup and shutdown dates?	X		
Documentation of instrumentation?	X		
Who has custody of the current network documents			Name: Miriam Talbert Title: Chemist Supervisor
Does the current level of monitoring effort, station placement, instrumentation, etc., meet requirements imposed by current grant conditions?	X		
How often is the network siting reviewed?			Frequency: Annually Date of last review: 9/12
Are there any issues		X	
Do any sites vary from the required frequency in 40 CFR 58.12?		X	
Does the number of collocated monitoring stations meet the requirements of 40 CFR 58 Appendix A?	X		

b) Changes to the Network since the last audit

What is the date of the most recent network assessment? (provide copy) Are all SLAMS parameters included? Yes Others? No 7/1/2012

Please provide information on any site changes since the last audit

Pollutant	Site ID	Site Address	Site Added/Deleted/Relocated	Reason (Assessment, lost lease, etc. Provide documentation of reason for each site change.)
PM 2.5	050450002	Conway AR	deleted	See 2012 ANR
PM 2.5	051070001	Helena	deleted	See 2012 ANR
PM 2.5	051150003	Russellville	deleted	See 2012 ANR
PM2.5	051310008	Ft. Smith	Relocated	Moved to Roland, OK
PM 2.5	401359021	Roland, OK	added	Moved From Ft. Smith AR
PM 2.5	051450001	Searcy	deleted	See 2012 ANR
O3	051430006	Fayetteville	added	See 2012 ANR

c) Proposed changes to the Network

Are future network changes proposed? No				
Please provide information on proposed site changes, including documentation of the need for the change and any required approvals				
Pollutant	**Site ID**	**Site Address**	**Site to be Added/Deleted/ Relocated**	**Reason (Assessment, lost lease, etc. Provide documentation of reason for each site change.)**

d) Field Support

Question	**Yes**	**No**	**Comment**
In average, how often are most of your stations visited by a field operator?			__132____ per __Year_____
Is this visit frequency consistent for all reporting organizations within your agency?	X		
On average, how many stations does a single operator have responsibility for?	4 – 5 for ADEQ full time employee 1 for remote sampler operator		
How many of the stations of your SLAMS/NCORE network are equipped with sampling manifolds?	8		
Do the sample inlets and manifolds meet the requirements for through the probe audits?	Yes		
I. Briefly describe most common manifold type	Glass		
II. Are Manifolds cleaned periodically	X		How often? Yearly
III. If the manifold is cleaned, what is used to perform cleaning	DI water, Paper towels, clean brushes		
IV. Are manifold(s) equipped with a blower	X		
V. Is there sufficient air flow through the manifold at all times?	X		Approximate air flow: 12 CFM
VI. How is the air flow through the manifold monitored?	Checked during each site visit and after cleaning manifold		
VII. Is there a conditioning period for the manifold after cleaning?	X		Length of time: 1-2 hours
VIII. What is the residence time? Approximately .004 min or .2 sec.			
Sampling lines: 1) What material is used for instrument sampling lines?	Teflon		
2) How often are lines changed?	Lines are changed when there is visible debris in the line.		
Do you utilize uninterruptable power supplies or backup power sources at your sites?		X	
What instruments or devices are protected?			None

i). SOPs

Question	Yes	No	Comment
Is the documentation of monitoring SOPs complete?	X		
Are any new monitoring SOPs needed?		X	
Are such procedures available to all field operations personnel?	X		
Are SOPs that detail operations during episode monitoring prepared and available to field personnel?	X		
Are SOPs based on the framework contained in Guidance for Preparing Standard Operating Procedures EPA QA/G-6?	X		

Please complete the following table:

Pollutant Monitored	Date of Last SOP Review	Date of Last SOP revision
SO_2	8/12	8/12
NO_2	8/12	8/12
CO	8/12	8/12
O3	8/12	8/12
PM_{10}	8/12	8/12
$PM_{2.5}$ FRM mass	8/12	8/12
Pb	8/12	8/12
$PM_{2.5}$ speciation	8/12	8/12
$PM_{10\text{-}2.5}$ FRM mass	8/12	8/12
$PM_{10\text{-}2.5}$ speciation	NA	NA
Continuous $PM_{2.5}$ mass	8/12	8/12
Trace levels (CO)	8/12	8/12
Trace levels (SO_2)	8/12	8/12
Trace levels (NO)	8/12	8/12
Trace levels (NOy) Total reactive nitrogen	8/12	8/12
Surface Meteorology Wind speed and direction, temperature, RH, precipitation and solar radiation	8/12	8/12
Others	8/12	8/12

ii). Instrument Acceptance

Has your agency obtained necessary waiver provisions to operate equipment which does not meet the effective reference and equivalency requirements? List all waivers. NONE

Please list instruments in your inventory

Pollutant	Number	Make and Models	Reference or Equivalent number
SO_2	8	Thermo 43C and 43i	EQSA-0486-060
NO_2	5	Thermo 42C and 42i	RFNA-1289-074
CO	2	Thermo 48C	RFCA-0981-054
O3	15	Thermo 49C and 49i	EQOA-0880-047
PM_{10}	2	2000/2000i and 2025/2025i	EQPM-0202-143 EQPM-0202-145
$PM_{2.5}$	29/2 6/2	2000/2000*i* 2025/2025*i*	EQPM-0202-143 EQPM-0202-145
Pb	2	2025	EQPM-0202-145
Multi gas calibrator		Thermo 146C and 146i ESC 7700P	NA
$PM_{2.5}$ speciation	2 2	Sass URG	NA
$PM_{10-2.5}$ speciation		NA	NA
$PM_{10-2.5}$ FRM mass		2025/2025i	EQPM-0202-145
Continuous $PM_{2.5}$ mass	10	R&P TEOM	EQPM-1090-079
Trace levels (CO)	2	Thermo 48i-TLE	RFCA 0981054
Trace levels (SO_2)	2	Thermo 43i-TLE	EQSA-0486-060
Trace levels (NO)		NA	NA
Trace levels (NOy)	2	Thermo 42i-Y	NA
Surface Meteorology	2	Met-One	NA
Others			

Please comment briefly and prioritize your currently identified instrument needs.

Question	Yes	No	Comment
Are criteria established for field QC equipment?	X		
Are criteria established for field QC gas standards?	X		

iii) Calibration

Please indicate the frequency of multi point calibrations.		
Pollutant	**Frequency**	**Name of Calibration Method**
PM 2.5	Yearly	Annual Flow, Temperature, and Pressure Calibration
PM10	Yearly	Annual Flow, Temperature, and Pressure Calibration
CO	Quarterly	Quarterly Dilution and Gas Flow Measurement, calculation, and comparison
NO2	Quarterly	Quarterly Dilution and Gas Flow Measurement, calculation, and comparison
NOy	Quarterly	Quarterly Dilution and Gas Flow Measurement, calculation, and comparison
CO (trace)	Quarterly	Quarterly Dilution and Gas Flow Measurement, calculation, and comparison
SO2 (trace)	Quarterly	Quarterly Dilution and Gas Flow Measurement, calculation, and comparison
SO2	Quarterly	Quarterly Dilution and Gas Flow Measurement, calculation, and comparison
Ozone	Quarterly	Quarterly Comparison with certified Transfer Standard
TEOM (continuous PM2.5)	Yearly	Annual Flow, Temperature, and Pressure Calibration

Question	**Yes**	**No**	**Comment**
Are field calibration procedures included in the document*?* SOPs?	X		ADEQ lab
Are calibrations performed in keeping with the guidance in section Vol II of the QA Handbook for Air Pollution Measurement Systems?	X		If no, why not?
Are calibration procedures consistent with the operational requirements of Appendices to 40 CFR 50 or to analyzer operation/instruction manuals?	X		If no, why not?
Have changes been made to calibration methods based on manufacturer's suggestions for a particular instrument?		X	
Do standard materials used for calibrations meet the requirements of appendices to 40 CFR 50 (EPA reference methods) and Appendix A to 40 CFR 58 (traceability of materials to NIST-SRMs or CRMs)?	X		Comment on deviations

Question	Yes	No	Comment
Are all flow-measurement devices checked and certified?	X		
Additional comments:			
Please list the authoritative standards used for each type of flow measurement, indicate the certification frequency of standards to maintain field material/device credibility.			

Flow Device	Primary Standard	Frequency of Certification
HiVol orifice	Do not use	
Streamline	In lab certification	Yearly
TriCal	Do Not Use	
BIOS	Manufacturer Certification	Yearly
DeltaCal	Do Not Use	
Gilibrators	Do Not Use	

Where do field operations personnel obtain gaseous standards?	Air Gas		
Are those standards certified by:			
The agency laboratory?	X		ZERO AIR
EPA/NERL standards laboratory?		X	
A laboratory separate from this agency's but part of the same reporting organization?		X	
The vendor?	X		AIR GAS MID SOUTH
Other describe:		X	
How are the gas standards verified after receipt?	The new cylinder is compared to the old		
How are flow measurement devices certified?	Bubble and Wet Test Meters.		
Please provide copies of certifications of all standards currently in use from your master and/or satellite standard certification logbooks (i.e., chemical standards, ozone standards, flow standards, and zero air standards) . Provided during TSA			
What equipment is used to perform calibrations (e.g., dilution devices) and how is the performance of this equipment verified?	Multigas Calibrators, zero air generators, and gas standards. The performance of the equipment is verified by quarterly flow measurements.		
Does the documentation include expiration date of certification?	X		
Reference to primary standard used?	X		
What traceability is used?	EPA Traceablility Protocol for Assay and Certification of Gaseous Calibration Standards EPA 600/R-12/531 (May 2012)		
Please attach an example of recent documentation of Traceability Provided during TSA			

Question	Yes	No	Comment
Is calibration equipment maintained at each station?	X		
How is the functional integrity of this equipment documented?	Logbooks		
Who has responsibility for maintaining field calibration standards? Shaun Kitchens			

Please list the authoritative standards and frequency of each type of dilution, permeation and ozone calibrator and indicate the certification frequency...

Calibrator	Primary Standard	Frequency of ~~Calibration~~Certification
Permeation calibrator flow controller	Do not use	
Permeation calibrator temperature	Do not use	
Dilution calibrator air and gas flow controllers	10 cc Bubble Meter Wet Test Meter	Quarterly
Field/working standard photometer	Thermo 49i-0701220059 Thermo 49i-0701720060	Quarterly
Ozone generator	Thermo 49C-0509111200	Annually

o) Please identify station standards for gaseous pollutants at representative air monitoring stations (attach additional sheets as appropriate):

Parameter	Station(s)	Identification of Standard(s)	Recertification Date(s)
CO	PARR	Airgas 2500 PPM CO Balance N2	4/27/2012
NO_2	PARR, Marion	Airgas 50 PPM NO Balance N2	2/11/2013
SO_2	PARR, El Dorado	Airgas 50 PPM SO2 Balance N2	2/11/2013
O3	Eagle Mt, PARR, NLRAP, Marion, DSR, Fayetteville, Deer, Springdale	Thermo 49CPS and 49iPS Ozone Calibrator	1/23/2013

iv) Repair

a) Who is responsible for performing preventive maintenance? All lab personnel

b) Is special training provided them for performing preventive maintenance? OTJ Briefly comment on background or courses.

c) Is this training routinely reinforced? Yes Yes No
If no, why not?

d) What is your preventive maintenance schedule for each type of field instrumentation? Monthly Verification, Quarterly audits, and Yearly Calibrations

e) If preventive maintenance is MINOR, it is performed at (check one or more):Field Station X, Headquarters facilities X, equipment sent to manufacturer ___

f) If preventive maintenance is MAJOR, it is performed at (check one or more): Field Station X, Headquarters facilities X, equipment sent to manufacturer X

g) Does the agency have service contracts or agreements in place with instrument manufacturers? Indicate below or attach additional pages to show which instrumentation is covered? No

h) Comment briefly on the adequacy and availability of the supply of spare parts, tools and manuals available to the field operator to perform any necessary maintenance activities. Verification kits containing: Temperature device, Barometer, Chinook with Manometer, Leak check adapter, blank cassette, operating manual. Do you feel that this is adequate to prevent any significant data loss? Yes

i) Is the agency currently experiencing any recurring problem with equipment or manufacturer(s)? Yes If so, please identify the equipment or manufacturer, and comment on steps taken to remedy the problem. Thermo series I PM monitors. Unreliable. Problems with the temperature and Pressure connection to the board. Slight pressure on the front of the cabinet will cause the unit to shift causing a loss of connectivity.

j) Have you lost any data due to repairs in the last 2 years? Yes
More than 24 hours? Yes
More than 48 hours? Yes
More than a week? No

k) Explain any situations where instrument down time was due to lack of preventive maintenance of unavailability of parts.
No situations have occurred.

RECORD KEEPING

Question	Yes	No	Comment
What type of station logbooks are maintained at each monitoring station? (maintenance logs, calibration logs, personal logs, etc.)	Maintenance logs which include Calibration, Verification, and other maintenance information		
What information is included in the station logbooks?	Site ID, sampler ID, Date installed at the site, Verification dates, LC results, Calibration date and constants, any maintenance preformed		
Who reviews and verifies the logbooks for adequacy of station performance?	Logbook is reviewed at Audit. This is performed by the ADEQ employee who has been assigned responsibility of the site for Audits.		
How is control of logbook maintained?	The station log book is physically on site inside of the PM monitors, The ambient logbooks are inside the shelters, They are kept up to date by the ADEQ employee who is assigned as the responsible party for the site.		
Where is the completed logbook archived?	In the Lab		

What other records are used?	Computerized records of Verifications, Audits, and Interval and run history		
Zero span record?	X		
Gas usage log?		X	
Maintenance log?	X		
Log of precision checks?	X		
Control charts?	X		
A record of audits?	X		
Please describe the use and storage of these documents: The paper documents are stored in the lab. The computer records are backed up. They are referenced quarterly during the QA/QC activities for data verification, or as needed Maintenance logs are stored with the instrument for easy access in the field. Referenced as needed			
Are calibration records or at least calibration constants available to field operators?	Yes		
Please attach an example field calibration record sheet to this questionnaire. Attached Below			

Particulate Sampler Audit

Site: _____ Sampler ID: _____

Date: _____/_____/_____ Time:_____:_____ Chk Time:_____:_____ Auditor: _____
Month Day Year Hour Minute Reset time if more than 5 minutes off.

External Leak Check
Old Samplers: New Samplers:
_____ mmHg/min.

Initial Press. (in. Hg):	
Final Press. (in. Hg at 1 min.):	

Temperature / Pressure Checks Temperature Device ID: _____ Barometer ID: _____

Filter Temp. (^{o}C)	Check Temp. (^{o}C)	Amb. Press. (mmHg)	Check Press. (mmHg)
Average:			

Amb. Temp. (^{o}C)	Check Temp. (^{o}C)
Average:	

Temperature should be within 4 ^{o}C and pressure within 10 mmHg of check.

Flow Rate Check: FTS ID (Chinook #): _____ Slope (M): _____ Intercept (B): _____
Set flow at 16.7 lpm.

Manom. Reading (in wc)	Calculated Flow (lpm)	Indicated Flow (lpm)	% Diff.
Average:			

Indicated flow should be within 4% of calculated (@ 16.7 this is ~ 16.0 to 17.4).

V) Site/Monitor Information Form (DSR & NLR are at the end of the questionnaire)

PQAO: Arkansas Department of Environmental Quality, Miriam Talbert

AQS Site Name : PARR _____

AQS Site Number 051190007 _____

Agency Site Name/No. _____
(if different than AQS Site Name/Number)

Site Address Pike Avenue at Riverfront Road

City & County: North Little Rock, Pulaski County _____

Site Coordinates +34.756189 -92.281296_____
(specify lat/long or UTM)

Site Elevation (m) 80 _____

Criteria Pollutants Monitored: PM2.5, PM10, PM coarse, NO, NO2, NOx, SO2, Pb, O3, SO2 trace, NO, NOdiff, NOy, CO, CO trace, Speciation, Carbon Speciation, PM2.5 continuous TEOM _____

Other Parameters_____

Nearest Meteorological Site: on site _____
('on site' is met tower present at this site)

Photographs to and from each cardinal direction attached?: yes_____
(Yes or No)

Name(s) of Report Preparer(s) Miriam Talbert_____

Name(s) of Auditors: Lisa Gulledge, Shaun Kitchens, Ben Gilbert_____

Date May 21, 2013 _____

Phone Number 501-682-0925_____

Site Map

Draw map of site and surrounding terrain and features, up to 100 meters.

Map notes

Google Earth Map dated 2/20/2012

Parr North

Parr Northeast

Parr East

Parr Southeast

Parr South

Parr Southwest

Monitor Information

Pollutants

	PM2.5	PM10/ Pb	CO
Manufacturer	Thermo	Thermo	Thermo
Model	2025 FRM	2025 FRM	48C
Serial number	22709	20946	48C-0606615586
Scale of representation MICro, MIDdle, Neighborhood, Urban	Neighborhood	Neighborhood	Neighborhood
Averaging time 1-, 8-, 24-hour	24 hour	24 hour	1 hour
Objective (Population, Max concentration, Background, Transport)	population	population	population
Height of probe above ground(m)	3	3	4
Distance from obstruction (m)	4	4	20
Type of obstruction (Wall, Tree, etc)	Building	Building	Levee
Distance from roadway (m)	75	75	75
Unrestricted airflow (Yes, No)	Yes	Yes	Yes
Designation (NCore, SLAMS,etc)	NCORE	NCORE	NCORE
Siting Criteria Met (Yes, No)	Yes	Yes	yes
	Speciation	Carbon Speciation	CO Trace
Manufacturer	Met One	URG	48i
Model	SASS		48i-TLE-0926137679
Serial number			
Scale of representation MICro, MIDdle, Neighborhood, Urban	Neighborhood	Neighborhood	Neighborhood
Averaging time 1-, 8-, 24-hour	24 hour	24 hour	1 hour
Objective (Population, Max concentration, Background, Transport)	population	population	Population
Height of probe above ground(m)	3	3	4
Distance from obstruction (m)	4	4	20
Type of obstruction (Wall, Tree, etc)	building	Building	Levee
Distance from roadway (m)	75	75	75
Unrestricted airflow (Yes, No)	Yes	Yes	Yes
Designation (NCore, SLAMS,etc)	NCORE	NCORE	NCORE
Siting Criteria Met (Yes, No)	Yes	Yes	yes

	SO2	SO2 Trace	NO2
Manufacturer	Thermo	Thermo	Thermo
Model	43C	43i	42C
Serial Number	43C-60109-325	43C-TLE-0926137678	42C-0509111205
Scale of representation MICro, MIDdle, Neighborhood, Urban	Neighborhood	Neighborhood	Neighborhood
Averaging time 1-, 8-, 24-hour	1 hour	1 hour	1 hour
Objective (Population, Max concentration, Background, Transport)	Population	Population	Population
Height of probe above ground(m)	4	4	4
Distance from obstruction (m)	Levee	Levee	Levee
Type of obstruction (Wall, Tree, etc)	20	20	20
Distance from roadway (m)	75	75	75
Unrestricted airflow (Yes, No)	Yes	Yes	Yes
Designation (NCore, SLAMS,etc)	NCORE	NCORE	NCORE
Siting Criteria Met (Yes, No)	Yes	Yes	Yes
	NOy	Ozone	TEOM
Manufacturer	Thermo	Thermo	Thermo
Model	42i	49C	1400a
Serial number	42C-Y-0736126354	49c-72118-370	27176
Scale of representation MICro, MIDdle, Neighborhood, Urban	Neighborhood	Neighborhood	Neighborhood
Averaging time 1-, 8-, 24-hour	1 hour	1 & 8 hour	1 hour
Objective (Population, Max concentration, Background, Transport)	Population	Population	Population
Height of probe above ground(m)	4	4	4
Distance from obstruction (m)	Levee	Levee	Levee
Type of obstruction (Wall, Tree, etc)	20	20	20
Distance from roadway (m)	75	75	475
Unrestricted airflow (Yes, No)	Yes	Yes	Yes
Designation (NCore, SLAMS,etc)	NCORE	NCORE	NCORE
Siting Criteria Met (Yes, No)	Yes	Yes	Yes

Insert additional copies of table as needed

Area Information

Street Name	Traffic Count (Vehicles/day)
Riverfront Road	5600

Direction	Predominant Land Use (Industry, Residential, Commercial or Agriculture)
North	Industry
East	Commercial
South	Commercial
West	Residential

Direction	Obstructions	Height (m)	Distance (m)
North	None		
East	None		
South	Levee	3	20
West	None		

Note: This table is for large obstructions that affect the entire site, such as large clusters of trees or entire buildings. Individual obstructions, such as walls, single trees, other monitors, etc, should be entered in the Monitor Information table.

Direction	Topographic Features (hills, valleys, rivers, etc.)	General Terrain (flat, rolling, rough)
North		Flat
East		Flat
South	River	Flat
West		Flat

Comments

3) LABORATORY OPERATIONS

State/Local/Tribal Agency Audited: Arkansas Department of Environmental Quality

City, State, and Zip Code: 5301 North Shore, NLR, 72118

Date of Technical System Audit: 11/26/2012

Auditor / Agency: EPA Region VI

Key Individuals

Laboratory Manager: Miriam Talbert

Laboratory Supervisor: Miriam Talbert

Quality Assurance Manager: Miriam Talbert

Laboratory Staff involved in the TSA: Miriam Talbert, Lisa Gulledge, Shaun Kitchens

a) Routine Operations

What analytical methods are employed in support of your air monitoring network?

	Analysis	Name or Description of Method
PM_{10}	Filter Weighing	
$PM_{2.5}$	Filter Weighing	
Pb	XRF	Performed by the national contract lab
Others (list by pollutant)		

Please describe areas where there have been difficulties meeting the regulatory requirements for any of the above analytical methods.

No problems

In the table below, please identify the current versions of written methods, supplements, and guidelines that are used in your agency.

Analysis	Documentation of Method
PM_{10}	Air Lab SOP
$PM_{2.5}$	Air Lab SOP
Pb	EPA National Contract Lab
Others (list by pollutant)	

Question	Yes	No	Comment
Were procedures for the methods listed above included in the agency's QA Project Plan or SOP's and were reviewed by EPA? Also, are SOP's easily/readily accessible for use and reference?	X		
Does you lab have sufficient instrumentation to conduct analyses?	X		

d) Please describe needs for laboratory instrumentation. No need at the present

b) Laboratory Quality Control

Please identify laboratory standards used in support of the air monitoring program, including standards which may be kept in an analytical laboratory and standards which may be kept in a field support area or quality assurance laboratory that is dedicated to the air monitoring program (attach additional sheets if appropriate):

Parameter	Location of Standards	Laboratory Standard	Recertification Date	Primary Standard*
CO	PARR	Same as Primary	10-9-12	Bubble, Wet Test
NO_2	Parr, Marion	Same as Primary	10-1-12,10-11-12	Bubble, Wet Test
SO_2	Parr. El Dorado	Same as Primary	10-1-12,10-2-12	Bubble, Wet Test
O_3	All O3 sites	Same as Primary	1-24-12	Thermo 49CPS
Weights	Weigh room	Weigh room	November 2012	Aldinger
Temperature	Lab	Lab	None	NIST
Moisture	Weigh room	Weigh room	None	
Barometric Pressure	In Lab	Lab	None	Fortin NIST
Flow	In Lab	Lab	None	BIOS
Other Flow Standard				
Lead	N/A	N/A	N/A	
Other				

*Standards to which the laboratory standards can be traced.

Question	Yes	No	Comment
Are all chemicals and solutions clearly marked with an indication of shelf life?	X		
Are chemicals removed and properly disposed of when shelf life expires?	X		
Are only ACS grade chemicals used by the laboratory?	X		

e) Comment on the traceability of chemicals used in the preparation of calibration standards. There are no traceability chemical standards required in the $PM_{2.5}$ program. The contract lab is responsible for their chemicals & standards

Question	Yes	No	Comment
Does the laboratory purchase standard solutions such as those for use with lead or other metals analysis?		X	Lead Analysis performed by contract lab. No chemical analysis performed by ADEQ Air Lab
Are all calibration procedures documented?	X		
If answer "yes" to (f), please describe the following: (1) Title of the document: (2) Revision number: (3) Where the document is:			
Are at least one duplicate, one blank, and one standard or spike included with a given analytical batch?	X		
Briefly describe the laboratory's use of data derived from blank analyses. The Lab uses this data to determine the quality of the data gathered, the accuracy of the equipment used for analysis, and to track any shift in the calibration of the balance.			
Are criteria established to determine whether blank data is acceptable?	X		
How frequently and at what concentration ranges does the lab perform duplicate analysis? What constitutes ***an*** acceptable agreement? Please comment in the space below. For PM2.5 duplicate analysis is preformed, on average, every 10 samples, randomly. Acceptable agreement is when the filters fall within less than 10 ug/M3 of one another			
Please describe how the lab use data obtained from spiked samples, including the acceptance criteria (e.g., acceptable percent recovery. There are no spiked samples used in the $PM_{2.5}$ programs.			

Question	Yes	No	Comment
Does the laboratory routinely include samples of reference material within an analytical batch?		X	
If yes, indicate frequency, level, and material used.			
Are mid-range standards included in analytical batches?	X		Mid-range certified weights
Please describe the frequency, level and compound used in the space provided below. Frequency: every 10 samples, 200ug, certified weights			

Question	Yes	No	Comment
Are criteria for real time quality control established that are based on the results obtained for the mid-range standards discussed above?	X		
If yes, briefly discuss them below or indicate the document in which they can be found. See QAPP approved 11/26/13, Section 13.4			
Are appropriate acceptance criteria for each type of analysis documented ?	X		

c) Laboratory Preventive Maintenance

Question	Yes	No	Comment
For laboratory equipment, who has the responsibility for performing preventive maintenance? All Air Lab staff			
Is most maintenance performed in the lab?	X		
Is a maintenance log maintained for each major laboratory instrument?	X		
Are service contracts in place for major analytical instruments?		X	

d) Laboratory Record Keeping

Question	Yes	No	Comment
Are all samples that are received by the laboratory logged in?	X		
Discuss sample routing and special needs for analysis (or attach a copy of the latest SOP which covers this). Attach a flow chart if possible. See QAPP Approved 11/26/2013 Field → Lab → Check in → Refrigeration → Conditioning →Weighing			
Are log books kept for all analytical laboratory instruments?	X		
Are there log books or other records that indicate the checks made on materials and instruments such as weights, humidity indicators, balances, and thermometers?	X		[redacted]
Identify type of record, acceptable/non-acceptable Log book			
Are log books maintained to track the preparation of filters for the field?	X		
Are they current?	X		
Do they indicate proper use of conditioning?	X		
Weighings?	X		
Stamping and numbering?	X		
Are log books kept which track filters returning from the field for analysis?	X		
How are data records from the laboratory archived? Where? In lab Who has the responsibility? Lisa Gulledge Title: Chemist How long are records kept? 7 Years			
Does a chain-of-custody procedure exist for laboratory samples? QAPP Section 12 or E:/Tech Services	X	.	[redacted]
If yes, indicate date, title and revision number where it can be found. SOP Tech services drive and also included in the QAPP, approved 11/30/12			

e) Laboratory Data Acquisition and Handling

Question	Yes	No	Comment
Identify those laboratory instruments which make use of computer interfaces directly to record data. Which ones use strip charts? Integrators? Microbalance			
Are QC data readily available to the analyst during a given analytical run?	X		
What is the laboratory's capability with regard to data recovery? In case of problems, can they recapture data or are they dependent on computer operations? Discuss briefly. Data has a nightly back up. Exposed filters can be reweighed, if needed.			
Has a user's manual been prepared for the automated data acquisition instrumentation?	X		
Please provide below a data flow diagram which establishes, by a short summary flow chart: transcriptions, validations, and reporting format changes the data goes through before being released by the laboratory. Raw Data → Daily Checks for operational issues → Quarterly check QC/QA → Quarterly AQS entry →Check for completeness and errors → If Okay it can be released, if not back to Step where error may have occurred → Annual Data Certification			

f) Specific Pollutants: PM_{10}, $PM_{2.5}$ and Lead

Question	Yes	No	Comment
PM_{10} and $PM_{2.5}$			
Does the agency use filters supplied by EPA?	X		
Do filters meet the specifications in 40 CFR 50?	X		
Are filters visually inspected via strong light from a view box for pinholes and other imperfections?	X		
Where does the laboratory keep records of the serial numbers of filters? E drive			
Are unexposed filters equilibrated in controlled conditioning environment which meets or exceeds the requirements of 40 CFR 50?	X		
Are the temperature and relative humidity of the conditioning environment monitored?	X		
Are the temperature and humidity monitors calibrated?	X		
Are balances checked with Class S or Class M weights each day when they are used?	X		
Is the balance check information placed in QC log book?	X		Monthly in logbook, with every weighing included in the weighing record Excel spreadsheet
To what sensitivity are filter weights recorded? .001 ug			
Are filter serial numbers and tare weights recorded in a bound notebook?		X	Stored electronically
Are filters packaged for protection while transporting to and from the monitoring stations?	X		
How often are filter samples collected? (Indicate the average elapsed time in hours between end of sampling and laboratory receipt.) 2 weeks			
In what medium are field measurements recorded (e.g., in a log book, on a filter folder, or on standard forms)? Standard form			
Are exposed filters reconditioned for at least 24 hrs in the same conditioning environment as for unexposed filters?	X		
Briefly describe how exposed filters are prepared for conditioning. Filters are held in freezer till shipped to lad, once in lab filters are held in freezer. Filters are place in weigh room at least 24 hours but no more than 72 hour before actual weighing			
Briefly describe how exposed filters are stored after being weighed. Currently Filters are stored in a freezer for one year. They will be held for 4 years at room temperature.			

Question	Yes	No	Comment
Are blank filters reweighed?	X		
Are chemical analyses performed on filters?		X	
LEAD			
Is analysis for lead being conducted using atomic absorption spectrometry with air acetylene flame?		X	XFR performed by contract lab
Is either the hot acid or ultrasonic extraction procedure being followed precisely? Is Class A borosilicate glassware used throughout the analysis?		X	Which?
Is all glassware cleaned with detergent, soaked and rinsed three times with distilled or deionized water?			
If extracted samples are stored, are linear polyethylene bottles used?			
Are all batches of glass fiber filters tested for background lead content?			
At a rate of 20 to 30 random filters per batch of 500 or greater?			
Are ACS reagent grade HNO_3 and HCl used in the analysis?			
Is a calibration curve available having concentrations that cover the linear absorption range of the atomic absorption instrumentation?			
Is the stability of the calibration curve checked by alternately remeasuring every 10th sample a concentration $\leq 1\mu$g Pb/ml; $\leq 10\ \mu$g Pb/ml?			

4) DATA AND DATA MANAGEMENT

State/Local/Tribal Agency Audited: Arkansas Department of Environmental Quality

City, State, and Zip Code: 5301 Northshore, North Little Rock, AR 72118

Date of Technical System Audit: 11/26/2012

Auditor / Agency: EPA Regions VI

Key Individuals

Data Manager: Miriam Talbert

Data Supervisor: Miriam Talbert

Quality Assurance Manager: Miriam Talbert

a) Data Handling

Question	Yes	No	Comment
Is there a procedure, description, or a chart which shows a complete data sequence from point of acquisition to point of submission of data to EPA?	X		

Please provide below a data flow diagram indicating both the data flow within the reporting organization.
Particulate:
Sample Collection & Data Download → sample/Data Form Shipment & Receipt → Sample Unpacked & Temp. Measured →

Sample Equilibration and Storage → Sample Analysis → QC→ Yes → ADEQ Network→ AQS Database
↑ ↓ ↓
↑ ←←←←←←←←←←←←←←←←←←←← No Data Review and Editing

Ambient Gas Monitors
Data Download & Storage→ Data Analysis → QC→ Yes → ADEQ Network→ AQS Database → Data Review and Editing
↑ ↓
↑ ←←←←← No

Are procedures for data handling (e.g., data reduction, review, etc.) documented?	X		

In what media (e.g., diskette, data cartridge, or telemetry) and formats do data arrive at the data processing location? Please list below.

Category of Data (by Pollutant)	Data Media and Formats
O3,SO2,NOx,CO,NOy	**TELMETRY**
All PM	TELEMTERY OR PALM

How often are data received at the processing location from the field sites and laboratory? DAILY

Is there documentation accompanying the data regarding any media changes, transcriptions, or flags which have been placed into the data before data are released to agency internal data processing?	X		[redacted]

Describe the type of documentation Flags will be noted in the missing data log

How data are actually entered to the computer system (e.g., computerized transcription (copy from disk or data transfer device), manual entry, digitization of strip charts, or other)?

Data transfer by modems or computer interface

For manual data, is a double-key entry system used?		X	

b) Software Documentation

Question	Yes	No	Comment
Does your agency use any AQS Manual?	X		
Does your agency use any Air Now Manual?		X	
If yes, list the title of manual used including the , version number and date published AIR NOW is the responsibility of the Air Division			
Does the agency have information on the reporting of precision and accuracy data available?	X		
What are the origins of the software used to prepare air monitoring data for release into the AQS and AirNow database? Please list the documentation for the software currently in use for data processing, including the names of the software packages, vendor or author, revision numbers, and the revision dates of the ***software.*** The ADEQ Air Lab is not responsible for AirNow ESC Ambient Vs. 4.61a Agalaire Air Vision - no version given Excel current version and vs. 5			
What is the recovery capability in the event of a significant computer problem (i.e., how much time and data would be lost)? No more than 1 day. Data backup is nightly			
Has your agency tested the data processing software to ensure its performance of the intended function are consistent with the QA Handbook, Volume II, and Section 14.0?		X	
Does your agency document software tests?		X	***AT INITIAL USE***
If yes, provide the documentation			

c) Data Validation and Correction

Question	Yes	No	Comment
Have your agency established and document the validation criteria ?	X		If yes, indicate document where such criteria can be found (title, revision date). QAPP 11-30-2012
Does documentation exist on the identification and applicability of flags (i.e., identification of suspect values) within the data as recorded with the data in the computer files?	X		
Does your agency document the data validation criteria including limits for values such as flow rates, calibration results, or range tests for ambient measurements?	X		
(i) If yes, please describe what action the data validator will take if he/she find data with limits exceeded (e.g., flags, modifies, or delete, etc.) . No actions have been required			
(ii) If yes, give examples to illustrate actions taken when limits were exceeded. No actions have been required			
Please describe how changes made to data that were submitted to AQS and AirNow are documented. Documentation in AIRS Data logbook. AirNow is not the responsibility of the Air Lab			
Who has signature authority for approving corrections? Name Miriam Talbert Program function QA/QC Manager			
What criteria are used to determine a data point be deleted? Discuss briefly. Checking the instrument status, looking at maintenance logbooks, checking Precision/Accuracy performances, checking the status of the building environment, and other factors that can influence the quality of the data. If found that the data is invalid, it is deleted and notation in made in the Missing Data log book and the AIRS data logbook (if the data has made it to AQS).			
What criteria are used to determine if data need to be reprocessed? Discuss. If when the data is checked there is an obvious error in a large amount of the data. (example POC1 and POC2 are reversed) The block of data may be deleted and submitted with the correct information.			
Are corrected data resubmitted to the issuing group for cross-checking prior to release?		X	ADEQ submits its own data

d) Data Processing

Question	Yes	No	Comment
Does the agency generate data summary reports?		X	

Please list at least three reports routinely generated, *including* the information requested below.

Report Title	Distribution	Period Covered
AMP 250NC	AIR LAB , EPA	2012
AMP 350	Air Lab	Quarterly
AMP 250	Air Lab	Quarterly

Question	Yes	No	Comment
How often are data submitted to AQS and AirNow? AQS – quarterly AIRNOW – Air Lab is not responsible			
Briefly comment on difficulties the agency may have encountered in coding and submitting data following the guidance of the AQS guidelines? Just general frustration with AQS			
Does the agency routinely request a hard copy printout on submitted data from AQS?	X		
Are records kept for at least 3 years by the agency in an orderly, accessible form?	X	.	
If yes, does this include raw data X , calculation X , QC data X, and reports X ? If no, please comment			
Has your agency submitted data along with the appropriate calibration equations used to the processing center?	X		
Are concentrations of pollutants other than $PM_{2.5}$ corrected to EPA standard temperature and pressure conditions (i.e.,298°K, 760 mm Hg) before input to AQS, and concentrations of $PM_{2.5}$ reported to AQS under actual (volumetric) conditions?	X		:PM10 only
Are audits on data reduction procedure performed on a routine basis?		X	
If yes, at what frequency?			
Are data precision and accuracy checked each time they are calculated, recorded, or transcribed to ensure that incorrect values are not submitted to EPA?	X		

e) Internal Reporting

What internal reports are prepared and submitted as a result of the audits required under 40 CFR 58, Appendix A?	
Report Title	Frequency
Missing Data Log Book	WEekly

What internal reports are prepared and submitted as a result of precision checks also required under 40 CFR 58, Appendix A?	
Report Title	Frequency
Missing Data Log Book	Weekly

Question	**Yes**	**No**	**Comment**
Do either the audit or precision ***check*** reports indicated include a discussion of corrective actions initiated based on audit or precision ***check*** results?		**X**	Actions will be documented in the Missing Data Log book, the AIRS log book or the Site books

Who has the responsibility for the calculation and preparation of data summaries? To whom are such summaries delivered?			
Name	**Title**	**Type of Report**	**Recipient**
Miriam Talbert	Program Manager	Certification Reports	Regions VI

f) External Reporting

For the current calendar year or portion thereof which ended at least 90 calendar days prior to the receipt of this questionnaire, please provide the following percentages for required data submitted on time.

Percent Submitted on Time* Period Covered: Jan 1 – June 30, 2012

Monitoring Qtr.	SO_2	CO	O_3	NO_2	PM_{10}	$PM_{2.5}$	Pb
1 (Jan 1 - March 31)	100	100	100	100	100	100	100
2 (Apr 1 - June 30)	100	100	100	100	100	100	100
3 (July 1 - Sept. 30)	100	100	100	100	100	100	100
4 (Oct.1 - Dec. 31)							

*"On time" = within 90 calendar days after the end of the quarter in which the data were collected.

For the same period, what fraction of the stations (by pollutant) reported less than 75% of the data (adjusted for seasonal monitoring and site start-ups and terminations)?

Percent of Stations <75% Data Recovery Period Covered: Jan 1 – June 30, 2012

Monitoring Qtr.	SO_2	CO	O_3	NO_2	PM_{10}	$PM_{2.5}$	Pb
1 (Jan 1 - March 31)	0	0	0	0	0	0	0
2 (Apr 1 - June 30)	0	0	0	0	0	0	0
3 (July 1 - Sept. 30)	0	0	0	0	0	0	0
4 (Oct.1 - Dec. 31)							

Identify the individual within the agency with the responsibility for reviewing and releasing the data.

Name MIRIAM TALBERT Program function

Question	Yes	No	Comment
Does your agency report the Pollutant Standard Index?	X		AQI?
Has your agency submitted its annual data summary report (as required in 40 CFR 58.26?	X		Yes
If yes, did your agency's annual report include the following:			
Data summary required in Appendix F?	X		
Annual precision and accuracy information described in Section 5.2 of Appendix A?	X		
Location, date, pollution source and duration of all episodes reaching the significant harm levels?			NA
Is Data Certification signed by a senior officer of your agency?	X		

V) Site/Monitor Information Form

PQAO: Arkansas Department of Environmental Quality, Miriam Talbert

AQS Site Name : NLR Airport

AQS Site Number 051191002

Agency Site Name/No. _____
(if different than AQS Site Name/Number)

Site Address: Remount Road

City & County: North Little Rock, Pulaski County

Site Coordinates +34.835721 -92.260581
(specify lat/long or UTM)

Site Elevation (m) 164

Criteria Pollutants Monitored: O3

Other Parameters

Nearest Meteorological Site: US Weather Station 85 m
('on site' is met tower present at this site)

Photographs to and from each cardinal direction attached?: yes
(Yes or No)

Name(s) of Report Preparer(s) Miriam Talbert

Name(s) of Auditors: Lisa Gulledge, Shaun Kitchens, Ben Gilbert

Date May 21, 2013

Phone Number 501-682-0925

Site Map

Draw map of site and surrounding terrain and features, up to 100 meters.

Map notes

Google Earth Map date 2/20/2012

NLR North

NLR Northeast

NLR East

NLR Southeast

NLR South

NLR Southwest

NLR West

NLR Northwest

Monitor Information

Pollutants

	O3		
Manufacturer	Thermo		
Model	49C		
Serial number	49C-65137-347		
Scale of representation MICro, MIDdle, Neighborhood, Urban	Neighborhood		
Averaging time 1-, 8-, 24-hour	24 hour		
Objective (Population, Max concentration, Background, Transport)	population		
Height of probe above ground(m)	4		
Distance from obstruction (m)	5		
Type of obstruction (Wall, Tree, etc)	Building		
Distance from roadway (m)	64		
Unrestricted airflow (Yes, No)	Yes		
Designation (NCore, SLAMS,etc)	SLAMS		
Siting Criteria Met (Yes, No)	Yes		

Insert additional copies of table as needed

Area Information

Street Name	Traffic Count (Vehicles/day)
Remount Road	3200

Direction	Predominant Land Use (Industry, Residential, Commercial or Agriculture)
North	Commercial
East	Commercial
South	Commercial
West	Forest/Military base

Direction	Obstructions	Height (m)	Distance (m)
North	None		
East	None		
South	Building	2	5
West	None		

Note: This table is for large obstructions that affect the entire site, such as large clusters of trees or entire buildings. Individual obstructions, such as walls, single trees, other monitors, etc, should be entered in the Monitor Information table.

Direction	Topographic Features (hills, valleys, rivers, etc.)	General Terrain (flat, rolling, rough)
North		Rolling
East		Flat
South		Flat
West		Rolling

Comments

V) Site/Monitor Information Form

PQAO: Arkansas Department of Environmental Quality, Miriam Talbert

AQS Site Name : DSR _____

AQS Site Number 051191008 _____

Agency Site Name/No. _____
(if different than AQS Site Name/Number)

Site Address Doyle Springs Road

City & County: Little Rock, Pulaski County _____

Site Coordinates +34.681343 -92.328697
(specify lat/long or UTM)

Site Elevation (m) 160 _____

Criteria Pollutants Monitored: PM2.5, O3, PM2.5 continuous TEOM_____

Other Parameters_____

Nearest Meteorological Site: NCORE SITE_____
('on site' is met tower present at this site)

Photographs to and from each cardinal direction attached?: yes_____
(Yes or No)

Name(s) of Report Preparer(s)Miriam Talbert _____

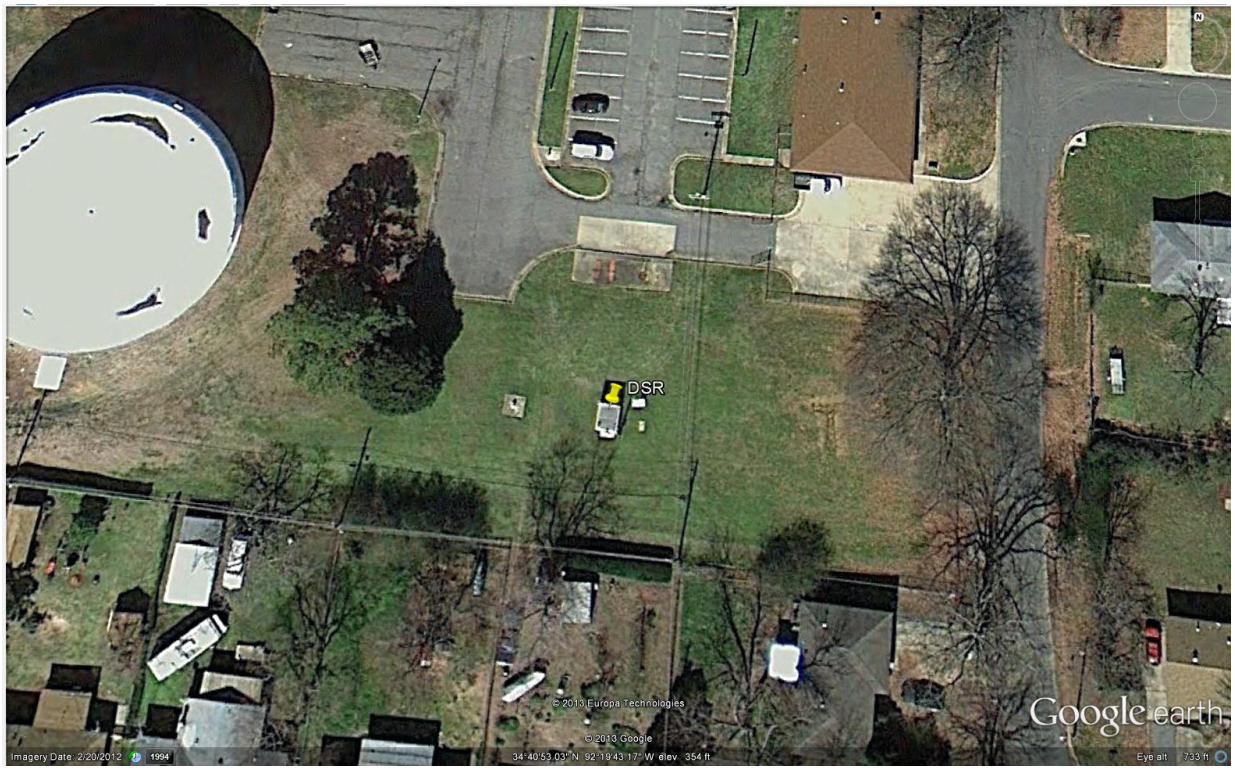
Name(s) of Auditors: Lisa Gulledge, Shaun Kitchens, Ben Gilbert_____

Date May 21, 2013 _____

Phone Number 501-682-0925_____

Site Map

Draw map of site and surrounding terrain and features, up to 100 meters.



Map notes

Google Earth Map Date 2/20/2013

DSR North

DSR Northeast

DSR East

DSR Southeast

DSR South

DSR Southwest

DSR West

DSR Northwest

Monitor Information

Pollutants

	PM2.5	O3	TEOM
Manufacturer	Thermo	Thermo	Thermo
Model	2025 FRM	49C	1400a
Serial number	21171	49C-72117-370	24664
Scale of representation MICro, MIDdle, Neighborhood, Urban	Neighborhood	Neighborhood	Neighborhood
Averaging time 1-, 8-, 24-hour	24 hour	1 & 8 hour	1 hour
Objective (Population, Max concentration, Background, Transport)	population	population	population
Height of probe above ground(m)	2	4	4
Distance from obstruction (m)	17	17	17
Type of obstruction (Wall, Tree, etc)	Tree	Tree	Tree
Distance from roadway (m)	50	50	50
Unrestricted airflow (Yes, No)	Yes	Yes	Yes
Designation (NCore, SLAMS,etc)	SLAMS	SLAMS	SLAMS
Siting Criteria Met (Yes, No)	Yes	Yes	yes

Insert additional copies of table as needed

Area Information

Street Name	Traffic Count (Vehicles/day)
Doyle Springs Road	N/A

Direction	Predominant Land Use (Industry, Residential, Commercial or Agriculture)
North	Commercial
East	Residential
South	Residential
West	Residential

Direction	Obstructions	Height (m)	Distance (m)
North	None		
East	None		
South	Tree		17
West	None		

Note: This table is for large obstructions that affect the entire site, such as large clusters of trees or entire buildings. Individual obstructions, such as walls, single trees, other monitors, etc, should be entered in the Monitor Information table.

Direction	Topographic Features (hills, valleys, rivers, etc.)	General Terrain (flat, rolling, rough)
North		Flat/Rolling
East		Flat
South		Rolling
West		Flat

Comments

I-30 is located 280 m to the South with a traffic count of 74,000

Arkansas Department of Environmental Quality
Air Lab Technical Services Division
Air Planning Branch, Air Division
Annual Network Review 2012 – 2013 for Ambient Air Monitoring Network

Under 40 CFR, Part 58, Subpart B, States are required to submit an annual monitoring network review to the Environmental Protection Agency (EPA) regional office in Dallas, Texas. This network plan is required to provide the framework for establishment and maintenance of an air quality surveillance system. The annual monitoring network plan must be made available for public inspection for at least 30 days prior to submission to EPA. The following document represents network plan proposed changes to the Arkansas air monitoring network for Fiscal Year 2012-13. This document represents the commitment of the Air Lab Technical Services Division and Air Planning Branch of the Air Division to effectively protect the health of the citizens of Arkansas through ambient air monitoring using the latest and best technology that is commercially available, and to communicate the data collected as quickly and accurately as possible.

Tables 1A& 1B contain a listing of all Arkansas Department of Environmental Quality (ADEQ), ambient air monitoring sites currently operated and maintained by the Air Lab of the Technical Services Division. The reference to "AQS#/ Site ID" in column 1 represents a unique site identification name that is assigned to each and every monitoring site in the network. AQS stands for Air Quality System. It is a national air monitoring database that is maintained by EPA with data collected from monitoring sites that are entered into the AQS database and made available to the public within 90 days following the end of each calendar quarter as required.

TABLE 1A

AQS#/ Site ID	Address/ Location	Latitude	Longitude	Pollutants Measured	Station Type	Sampling Method
05-001-0011 Stuttgart	1703 N. Beurkle	34.518392	-91.558822	$PM_{2.5}$	SLAMS	R&P 2000 FRM
05-003-0005 Crossett	201 Unity Rd.	33.136708	-91.950233	$PM_{2.5}$	SLAMS	R&P 2000 FRM
05-035-0005 Marion	Polk & Colonial Dr.	35.197178	-90.193047	$PM_{2.5}$ $PM_{2.5}$ Ozone NO_2	SLAMS SLAMS SLAMS SLAMS	R&P 2000 FRM R & P TEOM UV Photometric Chemiluminescence
05-051-0003 Hot Springs	300 Werner	34.469309	-93.000000	$PM_{2.5}$	SLAMS	R&P 2000 FRM
05-067-0001 Newport	7648 Victory Blvd.	35.638069	-91.189381	$PM_{2.5}$	SLAMS	R&P 2000 FRM
05-101-0002 Deer	Hwy 16	35.832633	-93.208072	Ozone	SLAMS	UV Photometric
05-113-0002	Hornbeck Rd	34.583581	-94.226019	$PM_{2.5}$	SLAMS	R&P 2000 FRM

Mena						
05-113-0003 Eagle Mtn	463 Polk 631	34.454428	-94.143317	Ozone	SLAMS	UV Photometric
AQS#/ Site ID	**Address/ Location**	**Latitude**	**Longitude**	**Pollutants Measured**	**Station Type**	**Sampling Method**
05-119-0007 PARR	Pike Ave at River Road	34.756072	-92.281139	$PM_{2.5}$* $PM_{2.5}$ PM_{10}* PM_{10}-$PM_{2.5}$* Ozone NO_x SO2 Speciation NO_y CO Trace SO_2 Trace CO Pb*	NCORE NCORE NCORE NCORE NCORE NCORE NCORE NCORE NCORE NCORE NCORE NCORE NCORE	R & P 2000 FRM R&P TEOM Gravimetric Gravimetric/FRM UV Photometric Chemiluminescence Pulsed Fluorescent Low Volume Chemiluminescence Nondispersive Infrared Gravimetric
05-119-1002 NLRAP	Remount Rd	34.835606	-92.260425	Ozone	SLAMS	UV Photometric
05-119-1004 Adams Field	1701 S. Bond	34.729486	-92.243431	$PM_{2.5}$	SLAMS	R&P 2000 FRM
05-119-1007 VA	4300 Block of West 7th	34.744814	-92.319906	PM10	SLAMS	Gravimetric
05-119-1008 DSR	Doyle Springs Rd	34.681225	-92.328539	$PM_{2.5}$ $PM_{2.5}$ Ozone	SLAMS SLAMS SLAMS	R&P 2000 FRM R&P TEOM UV Photometric
40-135-9021 Roland, OK	207 Cherokee Blvd	35.40814	-94.524413	$PM_{2.5}$*	SLAMS	R&P 2000 FRM
05-139-0006 El Dorado	Union Memorial Hospital	33.220122	-92.669453	$PM_{2.5}$ $PM_{2.5}$ SO2	SLAMS SLAMS SLAMS	R&P 2000 FRM R&P TEOM Pulsed Fluorescent
05-143-0005 Springdale	600 S. Old Missouri Rd	36.179617	-94.116611	$PM_{2.5}$ $PM_{2.5}$ Ozone	SLAMS SLAMS SLAMS	R&P 2000 FRM R&P TEOM UV Photometric
05-143-0006 Fayetteville	429 Ernest Lancaster Dr.	36.011703	-94.167436	Ozone	SLAMS	UV Photometric

* Collocated monitors

Table 1B

AQS#/ Site ID	Pollutants Measured	Operating Schedule	Monitoring Objective	Spatial Scale	NAAQS Comp.	MSA
05-001-0011 Stuttgart	$PM_{2.5}$*	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Not in a MSA
05-003-0005 Crossett	$PM_{2.5}$	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Not in a MSA
05-035-0005 Marion	$PM_{2.5}$ $PM_{2.5}$ Ozone	Daily 1 in 3 Continuous Continuous	Regional Transport	Neighborhood Neighborhood Neighborhood	Yes No Yes	Memphis

	NO_2	Continuous		Neighborhood Area Wide	Yes	
05-051-0003 Hot Springs	$PM_{2.5}$*	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Not in a MSA
05-067-0001 Newport	$PM_{2.5}$	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Not in a MSA
AQS# / Site ID	**Pollutants Measured**	**Operating Schedule**	**Monitoring Objective**	**Spatial Scale**	**NAAQS Comp.**	**MSA**
05-101-0002 Deer	Ozone	Continuous	Background	Neighborhood	Yes	Not in a MSA
05-113-0002 Mena	$PM_{2.5}$	Daily 1 in 3	Regional Background	Neighborhood	Yes	Not in a MSA
05-113-0003 Eagle Mtn	Ozone	Continuous	Regional Transport	Neighborhood	Yes	Not in a MSA
05-119-0007 PARR (NCORE SITE)	$PM_{2.5}$* $PM_{2.5}$ PM_{10}* Ozone NO_x SO_2 Speciation CO NO_y Trace SO_2 Trace CO Pb*	Daily 1 in 3 Continuous Daily 1 in 3 Continuous Continuous Continuous Daily 1 in 3 Continuous Continuous Continuous Continuous Daily 1 in 3	Population Exposure Population Exposure Population Exposure Population Exposure Susceptible and Vulnerable Population Exposure Population Exposure Population Exposure Population Exposure Population Exposure Population Exposure Population Exposure Population Exposure	Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood Neighborhood	Yes No Yes Yes Yes Yes No Yes No No No No	Little Rock
05-119-1002 NLRAP	Ozone	Continuous	Population Exposure	Neighborhood	Yes	Little Rock
05-119-1004 Adams Field	$PM_{2.5}$	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Little Rock
05-119-1007 VA	PM_{10}	Daily 1 in 6	Population Exposure	Neighborhood	Yes	Little Rock
05-119-1008 DSR	$PM_{2.5}$ $PM_{2.5}$ Ozone	Daily 1 in 3 Continuous Continuous	Population Exposure	Neighborhood Neighborhood Neighborhood	Yes No Yes	Little Rock
40-135-9021 Roland, OK	$PM_{2.5}$*	Daily 1 in 3	Population Exposure	Neighborhood	Yes	Ft. Smith
05-139-0006 El Dorado	$PM_{2.5}$ $PM_{2.5}$ SO_2	Daily 1 in 3 Continuous Continuous	Population Exposure Population Exposure Population Exposure	Neighborhood Neighborhood Neighborhood	Yes No Yes	Not in a MSA
05-143-0005 Springdale	$PM_{2.5}$ $PM_{2.5}$ Ozone	Continuous Daily 1 in 3	Population Exposure Population Exposure AQI	Neighborhood Neighborhood	No Yes	Fayetteville/ Springdale/ Rodgers
05-143-0006 Fayetteville	Ozone	Continuous	Population Exposure	Neighborhood	Yes	Fayetteville/ Springdale/ Rodgers

* Collocated monitors

All ADEQ sites and monitors conform to 40 CFR Part 58.

Population Statistics (Based on 2010 Census)

The MSA's for the state of Arkansas:

1. Little Rock MSA – 671,459
2. Fayetteville MSA – 424,404
3. Ft. Smith MSA – 230,083
4. Texarkana MSA – 136,027
5. Pine Bluff MSA – 77,435
6. Jonesboro MSA – 96,443
7. Memphis TN,MS,AR MSA – 1,139,798

Ozone

According to Table D-2 of Appendix D to Part 58, 40 CFR the minimum number of SLAMS ozone monitors required based on population and also ozone concentration are:

Little Rock – 2
Memphis MSA – 2
Fayetteville/Springdale -2

Currently the state exceeds the minimum requirements with 3 ozone monitors in the Little Rock MSA, 1 in the Memphis MSA (Memphis has 2 monitors). The additional ozone monitor has been added in the Springdale-Fayetteville-Rodgers MSA. There are 2 additional SLAMS ozone monitors in the rural areas of Deer and Eagle Mountain which are used to enhance EPA's AIRNOW ozone mapping program and to determine background and transport ozone. The current network is more than adequate to assess population exposure, transport and background ozone levels.

The new requirements for establishing monitors to meet the urban and rural requirements are in the planning stage. The rural objectives have been met with the Deer and Eagle Mountain sites. Arkansas will be required to add additional ozone monitors (3) in the state monitoring network: Hot Springs, Pine Bluff & Jonesboro. (This was put on hold in late 2011). The required monitor in the Ft. Smith MSA is covered by the ozone monitor in Roland, OK.

Table 2 – $PM_{2.5}$

$PM_{2.5}$ FRM Sites	Current Sampling Schedule	Proposed Sampling Schedule	2009 Daily 98^{th} % $\mu g/m^3$	2010 Daily 98^{th} % $\mu g/m^3$	2011 Daily 98^{th} % $\mu g/m^3$	Design Value % Daily NAQQS $\mu g/m^3$	2009 Arith. Mean $\mu g/m^3$	2010 Arith. Mean $\mu g/m^3$	2011 Arith. Mean $\mu g/m^3$	Design Value %Annual NAAQS	Co-located with TEOM
Adams Field	1:3	1:3	24.9	22.8	25.8	70	11.4	12.4	11.4	78%	NO
DSR	1:3	1:3	25.7	23.2	26.3	72	11.2	12.6	12.6	81%	YES
Crossett	1:3	1:3	18.5	20.4	26.9	62	9.4	11.2	11.2	70%	NO
El Dorado	1:3	1:3	21.6	20.5	23.7	62	10.0	11.6	11.6	72%	YES
Roland, OK	1:3	1:3			22.7				11.4	76%	NO
Hot Springs	1:3	1:3	20.9	20.8	22.1	60	10.1	11.0	11.4	72%	NO
Marion	1:3	1:3	21.8	22.7	22.1	63	9.9	11.8	11.6	74%	YES
Mena	1:3	1:3	20.4	21.6	22.2	61	9.9	10.9	11.5	71%	NO
Newport	1:3	1:3	19.5	22.9	23.2	62	9.2	11.0	10.3	67%	NO
Parr	1:3	1:3	22.8	22.2	24.9	67	10.8	12.2	12.0	77%	YES

Springdale	1:3	1:3	23.2	23.0	24.2	67	10.2	11.4	11.6	73%	YES
Stuttgart	1:3	1:3	14.9	23.4	22.2	58	8.9	11.4	10.9	69%	NO

$PM_{2.5}$

According to Table D-5 of Appendix D, Part 58, 40 CFR, the minimum number of SLAMS $PM_{2.5}$ monitors required are:
Little Rock – 1
Memphis MSA– 2
Fayetteville/Springdale MSA - 0

ADEQ currently operates the following sites (Table 2) in the Arkansas network, which exceeds minimum SLAMS network requirements, and are comparable to the $PM_{2.5}$ NAAQS.

LR – DSR (05-119-1008) and PARR (05-119-0007) are collocated with a TEOM.

Design values have been below 80% of the NAAQS for the past 5 years at various sites in the state. As requested in the 2011 Annual Network Plan the following changes have been made. First, the Searcy $PM_{2.5}$ monitoring ended 12/1/2011. Then the Conway, Helena, and Russellville $PM_{2.5}$ monitors ended 6/30/2012. Since Conway was a collocated site, the QC monitor was relocated to Hot Springs (05-051-0003). Hot Springs was chosen as the new QC site due to available space and resources.

The following sites (Table 3) are for daily Air Quality Index (AQI) reporting. The monitors at these locations also report hourly data to the AIRNOW web page to be used for real-time air quality particulate mapping. No changes in number or location are requested for the two sites.

Table 3

Continuous $PM_{2.5}$ AQI Sites	Sampling Frequency	AQS #
Springdale	Hourly	05-143-0005
PARR	Hourly	05-119-0007

PM_{10}

According to CFR 40, Table D-4 of Appendix D, Part 58, the minimum requirement for low concentrations sites and number of stations per MSA are:
Little Rock – 1-2
ADEQ currently has two monitors in the Little Rock MSA below in Table 4.
Sampling frequency will be changed from 1 in 6 to 1 in 3 due to the NCORE requirements for $PM_{10-2.5}$

Table 4

PM_{10} Sites	Current Sampling Schedule	2009 Annual Max.Conc. $\mu g/m^3$	2010 Annual Max.Conc. $\mu g/m^3$	2011 Annual Max. Conc. $\mu g/m^3$	3 yr avg. PM_{10} Conc. 2009-11 $\mu g/m^3$	Proposed Sampling Schedule
05-119-0007	1:3	41	40	45	42	1:3
05-119-1007	1:6	48	39	49	45	1:6

Sulfur Dioxide (SO_2), Nitrogen Oxides (NO_2), and Carbon Monoxide (CO)
40 CFR Part 58 Appendix D minimum requirements for the number of SO_2, NO_2, or CO sites, however, discontinuation of existing sites must be approved by the EPA Regional Administrator.

SO_2 – Currently there are 2 sites in Arkansas: PARR in Little Rock (05-119-0007) and El Dorado (05-139-0006). Although El Dorado was approved to be removed in the 2010-11 network review, it is still in operation.

ADEQ has evaluated the network monitoring criteria for SO2 in the Fayetteville-Rogers-Springdale, AR-MO CBSA in accordance with 40 CFR Part 58, Appendix D, 4.4.2(a). The latest census data places the population of the CBSA at 47,830 and the aggregated SO2 emission within the CBSA is 9,140.6 tons per year. The Population Weighted Emission Index value calculated using the formula at Appendix D, 4.4.2(a) [PWEI = CBSA population X CBSA tons/year SO2 / 1,000,000] is 4,331.1; below the value requiring a SO2 monitor to be placed within the CBSA. Discussions will continue with the RA concerning this monitor.

NO_2 – There are 2 NO2 sites in Arkansas: PARR in Little Rock (05-119-0007) and Marion (05-035-0005).

The NO2 monitor located at Marion (05-035-0005) was originally sited for the purpose of data gathering in support of a special air quality study for Crittenden County Arkansas in 2005. The monitor was left in place at the conclusion of that study. The Marion monitor is not located in an area of "expected highest NO2 concentrations representing the neighborhood or larger scales" and therefore does not meet the siting requirements of 40 CFR 58, Appendix D 4.3.3 as an Area-wide NO2 Monitor. Discussions will be initiated with the other State and Local entities in the Memphis MSA in order to select a more appropriate location for the Area-wide monitor.

The PARR site meets the criteria for the RA40 national requirement for susceptible and vulnerable populations as listed in 40 CFR 58 Appendix D Section 4.3.4

CO – There is one CO monitors in Arkansas it is located at the NCORE site (PARR 05-119-0007). There are no plans for any additional CO sites.

NCORE – Trace SO_2, CO and NO_y

NO_y, Trace SO_2 and Trace CO are monitored at the NCORE site (PARR 05-119-0007). No changes are planned

$PM_{2.5}$ Chemical Speciation
Speciation sampling is performed at the NCORE site. We currently have a sampler at PARR (05-119-0007) and no changes are planned.

Lead

Collocated lead samplers have been added to the PARR location as required by 1/1/2012. No source-oriented monitoring is necessary since lead emissions from Arkansas facilities are below a half a ton per year, facilities have been given waivers, or facilities have modeled out of the requirement.

Facilities and waiver status are listed below:

Current Permit	NEI Facility Name	Total Lead Permitted (tpy)	2008 NEI (tpy)	Waiver Granted?
0449-AOP-R7	ENTERGY ARKANSAS - INDEPENDENCE	2.1	1.42	yes
0263-AOP-R6	ENTERGY ARKANSAS - WHITE BLUFF	2.1	1.43	yes
1113-AOP-R5	PINE BLUFF ARSENAL	1.54	0.13	N/A
597-AOP-R12	GEORGIA-PACIFIC LLC CROSSETT PAPER OPERATIONS	23.7	0.22	yes
1139-AOP-R11	NUCOR STEEL - ARKANSAS	3.59	0.02	yes
0883-AOP-R9	NUCOR - YAMATO STEEL CO.	2.2	0.04	yes
0035-AOP-R8	ARKANSAS STEEL ASSOCIATES, LLC	1.52	0.91*	Request pending
693-AOP-R8	QUANEX CORP - MACSTEEL DIVISION	1.0	0.01	yes
0039-AOP-R10	3M INDUSTRIAL MINERAL PRODUCTS DIV.	0.09	0.04	N/A
1659-AOP-R4	JW ALUMINUM COMPANY	0.85	0.23	N/A

* Arkansas Steel Associates has a NEI Pb value greater than 0.5 tpy. Modeling was done to determine its impact on ambient Pb NAAQS with potential to emit and not actual emissions the facility passed.

AEROMOD dispersion modeling for Arkansas Steel Associates:

Pollutant	Emission Rate (lb/hr)	NAAQS Standard ($\mu g/m^3$)	Averaging Time	Highest Concentration ($\mu g/m^3$)	% of NAAQS
Pb	0.41	0.15	Rolling 3-month Period over 3 years (not to be exceeded in any 3 month period)	.046 (highest month)	30.6

There is only one (1)facility, Arkansas Steel Associates, LLC (ASA), that emits greater than 0.5 tpy of lead based on the most recent NEI data that is not currently covered by an approved source-specific monitoring waiver. A source-specific waiver request regarding ASA was submitted by ADEQ to EPA Region 6 dated August 15, 2011. No response to this request has been received as of the publication of this Plan. A source-specific lead monitor will not be located will not be placed in regard to ASA until final action by EPA on the pending waiver request has been made.
The Pine Bluff Arsenal is no longer in operation.

Summary

Questions concerning lead emissions and waivers should be sent to:
Mark McCorkle
ADEQ
501-682-0736
mac@adeq.state.ar.us

Any other comments or questions should be sent to:
Miriam Talbert - Air Lab Supervisor
ADEQ
5301 Northshore Dr.
North Little Rock, AR 72118
501-682-0925
miriam@adeq.state.ar.us